R E M A R K S

The present invention addresses a national need to alert the public during emergencies such as terrorist attacks, etc. Sirens are a traditional means of public warnings, but would be ineffective and impractical for less densely populated and rural areas. The inventor has determined that the technology in the present application would address concerns raised by the Homeland Security Office, especially for a large scale missile attack.

UNDUE EXPERIMENTATION

The Examiner rejects claims 8, 17, 30-31 and 39-40 under 35 USC 112, first paragraph, as containing subject matter not described in the specification "in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." The Examiner contends the specification and drawings failed to disclose switching equipment that can transmit

> the emergency ring pattern at different times for different groups of the subscriber lines and to transmit a ring pattern being performed by multiplexing the emergency ring pattern in order to ring different lines in the same time period with a different phase so that it raises doubt as to the possession of the claimed invention at the time of filing.

The Federal Circuit has made it clear that a patent need only enable persons skilled in the relevant art to practice the invention without undue experimentation. *See W. L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983). Therefore, the Examiner must show that persons skilled in this highly sophisticated technology would not be able to design a multiplexed ringing circuit without undue experimentation. That

technical burden cannot be carried here. Moreover, MPEP2164.04 makes it clear that the Examiner has the burden of showing undue experimentation and must state reasons supporting any adverse conclusion.

The Examiner might argue that the present invention might require new hardware in the central office, or that he prefers a different design, but the time to argue that a simple multiplexing circuit requires undue experimentation, has long past. Telephone networks have been multiplexing encoded voice signals at very high speed for a very long time. In fact, for some time, even inexpensive children's toys have flashed lights, sounded beeps, and electromechanically moved components in dazzlingly complex, synchronized sequences. The Examiner cannot convincingly argue that producing the ring sequences of Figures 3 and 4 would be a difficult chore for the people at Bellcore.

Regardless, the specification is not silent on implementing ringing circuitry. Referring to the ring module specifically illustrated in Figure 1, the specification says the ringing circuitry required to ring subscriber phones with the special ring would consist of "an electronic module (module [5a] of Figure 1) that would be added to new and existing telephone switches (as well as PBXs)." Page 9, lines 15-18. The Examiner is invited to read again the technical description of the ring implementation found in the original specification on pages 5-9 and 11.

PRIOR ART REJECTIONS

The Examiner rejects claims 1, 2, and 7-10, under 35 USC 102(b) citing U.S. Patent 5, 166,972 (Smith). Claims 3-6, 12-19, 21-23, 25-32, and 34-41 were rejected under 35 USC 103(a) citing Smith and U.S. Patent 6,594,345 (Vinson).

Claim 11 was rejected under 35 USC 103(a) citing Smith and U.S. Patent 6,418, 216 (Harrison). Claims 20, 24, 33 and 42 were rejected under 35 USC 103(a) citing Smith, Vinson, and Harrison. The others cited references were not applied against any of the claims and applicant believes these other references do not suggest the present invention.

Claims 21-33 and 42 were canceled and are therefore no longer in issue.

SIGNIFICANT PROBLEMS SOLVED

The inventor has recruited the ringing device of an ordinary telephone as a public warning system and has solved the problems associated with using the public switched telephone network (PSTN) for a mass ringing campaign. The inventor has discovered that using conventional telephone system techniques are inappropriate. For example, the conventional telephone technique of continuing to ring a party indefinitely consumes large amounts of power. Since power is always limited, the number of telephones that can be rung indefinitely is restricted by the power limitations.

Moreover, conventional telephone techniques attempt to establish a voice connection, which consumes system processing power and bandwidth. In the case of a mass ringing campaign, these conventional techniques will choke the system and slow if not prevent the ringing campaign.

Instead of attempting the traditional, slow switching techniques of ordinary voice communications, the present disclosure proposes ringing based not on individual identities, but on a geographical region of concern. For example, a central emergency management office can simply identify area codes and exchanges that are affected by

the emergency. In that case, the central office will receive a relatively simple command to ring all phones in designated area codes and exchanges. This may mean ringing all phones under the control of the central office. This simplified command eliminates the need to spawn processes designed to establish voice communications with specified individuals. Instead, the system is simply programmed for the computers to begin the ringing process immediately without the need to discriminate between individuals within the affected geographical region of concern.

With such a large system as the PSTN, simply commanding all phones to ring is not a trivial task. The present disclosure accomplishes this task by employing creative ringing techniques that avoid the daunting overhead of voice communications and will work around the power limitations.

In particular, a predetermined ring pattern will be used, but only for a limited amount of time in order to prevent excessive power consumption. In one embodiment a time-limited ring pattern allows groups or tiers of phones to be rung in sequence. In one embodiment the ring pattern includes one or more pauses during which different group(s) of telephones are rung. Thus, the phones seem to be ringing in the same time frame, although the ringing power is being multiplexed.

The emphasis on efficient and widespread ringing makes sense because the ringing telephones are not to be answered. Instead, the public will be educated and trained to recognize the special ring pattern and then seek emergency information from other media such as radio and television. See page 3, lines 19-23, of the present specification.

SMITH

Smith's system is focused on establishing voice communications between a limited number of individuals. Specifically, an authorized caller can call parties listed on a hunt group assignment table. Thus, every party to be called must be separately listed and processes must be spawned to establish voice communications with each. Therefore, the Smith system is not practical for indiscriminate calling throughout a geographic region.

Once a call is placed in the Smith system, the phones will continue to ring indefinitely (either immediately or once a busy line hangs up). See column 4, lines 29-32. Indefinite ringing would consume large amounts of power for a mass calling. Moreover, because the amount of power available for ringing is always limited, indefinite ringing will limit the number of parties that can be rung.

Also, Smith's system is intimately involved in establishing voice communications and therefore only teaches execution of conventional software techniques that are used to establish such voice communications. However, the operations needed to establish voice communications add considerable overhead to the Smith system. It is doubtful that the Smith system could be implemented for a mass warning campaign because the main controller 1 would not have the processing capacity to handle simultaneous calls to all or even a majority of the lines under its control.

To understand how quickly the main controller 1 would become overwhelmed, one may consider the complexity of the processes proposed by Smith. In response to a telephone call from an authorized telephone calling a predetermined "pilot" telephone

number, main controller 1 spawns a call process routine CP1, which sends a terminate

message signal to call process CP2, which sends a request device message signal to

the emergency group manager (EM), which sends individual request device message

signals to the device manager process (DM), which send a seize message signal

(specifying ring type) to peripheral controllers 5A-5C, which send signals to line cards

9, which generate ringing signals on the hunt group telephones. Imagine this process

being expanded to hundreds of thousands of calls. Then, if a called party answers, an

answer message is sent back up the chain where process CP1 authorizes process CP2

to make a connection through switch 3.

All of this complexity stems from the fact that the calls are very discriminating

and will target individuals on a restricted hunt group list. This complexity seems to

flow from the desire by Smith to minimize changes to the central office. See column

1, lines 42-46.

<u>VINSON</u>

Vinson has a remarkably limited and inefficient system. The Vinson system is

designed for subscribers that have caller ID (that is, CNAM or CND service). In

particular, these customers must have a CPE (customer provided equipment 32)

designed to process these specialized signals. Thus, the Vinson system will not work

for the general population, which has ordinary telephones.

Incredibly, the Vinson system is designed to ring each party one by one. Each

party gets two rings before moving on to another party. See column 6, lines 17-24,

& lines 43-48; and column 7, lines 9-14, & lines 36-41. If calling each party took the

minimum of six seconds demanded by Vinson, notifying a mere 5,000 parties would take at least 8 hours and 20 minutes.

Moreover, the parties are notified not by a special ring but through a message displayed on the caller ID screen. This is obviously not going to get the attention of most called parties. Recognizing this deficiency, Vinson suggests that each of the parties be asked to purchase a specialized CPE that decodes the incoming emergency signal to sound an alarm. See column 7, lines 43-59.

HARRISON

Harrison is cited because the Examiner contends that it shows "other environments that are external to the PSTN including PBXs and cellular telephone network (col. 9 lines 30-54) in order to make compatible with other environments that are external to the PSTN."

While PBXs and cellular telephone networks are mentioned, Harrison is only concerned with the ability of one authorized caller to connect to a single telephone that is busy with another call. Thus, Harrison is unconcerned with broadcasting an emergency warning. While it is true that the caller that barges into the busy line may eventually connect and then speak about some emergency, this is still only a one-on-one communication. The fact that there may be a superfluous third party that stays connected (much like a conference call) the superfluous third party may be located in another country and will form no part of the target audience for an emergency broadcast.

CLAIM ANALYSIS

In order to make explicit the features that are implicit in the original claim (or

just to focus attention on issues raised by the Examiner), claim 1 was amended to

recite a switch that can:

> non-verbally alert people to seek emergency instructions from another medium without answering a telephone, said switch being operable to:
> (i) receive and decode an emergency signal broadcast from a central authority as a single command event intended to alert and warn the general public, said emergency signal having been encoded to signify a geographical region of concern; and
> (ii) if area codes and exchanges handled by said switch are within said geographical region of concern transmit an emergency ring pattern over all available ones of said subscriber lines handled by said switch that are in area codes and exchanges within said geographical region of concern without discriminating between subscribers, said emergency ring pattern simultaneously ringing a plurality of subscribers in a repetitive pattern that is discontinued after a preselected number of repetitions.

These recited features have support in the present specification at page 5, lines 4-17;

page 5, line 29 through page 6, line 28; page 7, lines 9-25; page 8, lines 7-13; page

9/15-17; page 10, lines 21-25; and page 11, line 10 through page 12, line 2.

The limited and discriminating ringing done by Smith is not in the same category

as the present invention. Specifically, Smith does not suggest transmitting "an

emergency ring pattern over all available ones of said subscriber lines handled by said

switch that are in area codes and exchanges within said geographical region of

concern without discriminating between subscribers," as recited in amended claim 1.

Also, Smith rings indefinitely and therefore does not suggest an emergency ring

pattern with a "repetitive pattern that is discontinued after a preselected number of

repetitions," as recited in amended claim 1. In fact, Smith does not appear to be highly relevant since Smith's system is all about voice communications and does not "non-verbally alert people to seek emergency instructions from another medium without answering a telephone," as also recited in amended claim 1.

Applicant has an earlier filing date than Vinson since Applicant's parent application was filed August 10, 1998, more than one year before Vinson filed. The technical features the Examiner extracts from Vinson were already disclosed in Applicant's parent case. Thus, Vinson is not prior art. Even if it were, the Vinson system bears almost no relation to the present invention. Vinson's system does not provide special rings, instead the Vinson system places messages on caller ID screens. More specifically, Vinson does not suggest an "emergency ring pattern simultaneously ringing a plurality of subscribers," as recited in amended claim 1. Instead of ringing simultaneously, Vinson rings subscribers one by one, at the rate of one subscriber every six seconds; i.e., 5,000 subscribers in eight hours and 20 minutes.

Harrison is not relevant to claim 1 and the Examiner only uses Harrison with regard to some subsidiary issues raised by the dependent claims.

The two other claims that are independent, amended claims 12 and 34, have effectively the same distinguishing recitations that are discussed above and therefore distinguish over the cited art for the same reasons.

The remaining claims are dependent and distinguish over the cited art for at least the reasons given in connection with independent claims 1, 12, and 34.

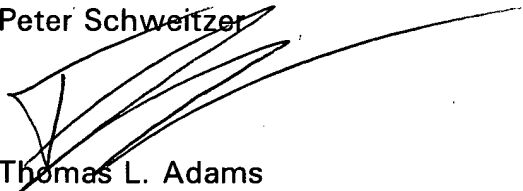Also, new claims 43 and 44 were added to explicitly claim important features

of the present system that were first introduced in the parent application. See the parent specification at page 4, lines 15- 22; and page 6, lines 12-13; and Figure 5.

Finally, the Examiner is respectfully requested to reconsider the rejection of claims 8-10, 17-19, and 39-41, which concern multiplexed ringing or ringing in tiers. The cited art does not come close to suggesting these novel features.

CONCLUSIONS

It is believed that the foregoing fully responds to the objections and rejections entered by the Examiner and places this application in condition for allowance, which action is respectfully requested.
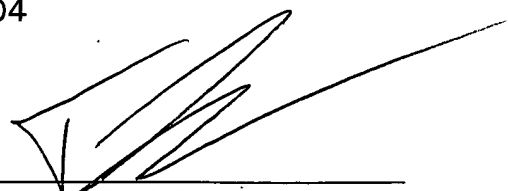
Respectfully submitted,
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on this ____ day of July, 2004

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